REMARKS

Applicant thanks the Examiner for total consideration given the present application. Claims 50-70 are currently pending of which claims 51 and 67-69 have been withdrawn from further consideration as being directed to non-elected invention. Claims 50-53, 55-60, 62-65, and 70 stand rejected of which claims 50 and 70 are independent. Applicant respectfully requests reconsideration of the rejected claims in light of the remarks and amendment presented herein, and earnestly seek timely allowance of all rejected claims.

Allowable Subject Matter

Applicant appreciates that claims 54, 61, and 66 are indicated to define allowable subject matter.

Claim Objections

Claims 56 and 66 stand objected for minor informalities. These claims have been amended to address this issue. Accordingly, it is respectfully requested to withdraw this objection.

Claim Rejections - 35 U.S.C. § 112

Claims 55, 57, 62, 63, and 65 stand rejected under 35 U.S.C. § 112, second paragraph, as allegedly being indefinite.

Although Applicant does not necessarily agree with the Examiner's assertion of indefiniteness, Applicant has amended claims 55, 57, 62, and 65 as suggested by the Examiner merely to expedite prosecution. Accordingly, Applicant respectfully requests that the Section 112, second paragraph rejection of claims 55, 57, 62, 63, and 65 be withdrawn.

Claim Rejections - 35 U.S.C. § 102

A. Claims 50, 52, 57, and 70 stand rejected under 35 U.S.C. § 102(b) as allegedly being anticipated by Silhengst et al. (US 6,249,375) ("Silhengst"). Applicant respectfully traverses this rejection.

For a Section 102 rejection to be proper, the cited reference must teach or suggest each and every claimed element. *See M.P.E.P. 2131, M.P.E.P. 706.02.* Thus, if the cited reference fails to teach or suggest one or more elements, then the rejection is improper and must be withdrawn.

In this instance, it is respectfully submitted that Silhengst fails to teach or suggest each and every claimed element of independent claims 50 and 70. Independent claim 50 recites a device for contrast enhancement for display devices wherein the device includes "*a focusing optical device* including a lens, *a diaphragm* with at least one aperture arranged, *relative to the incident light, behind the lens*, and *a light disposal element for absorbing light arranged, relative to the incident light, behind the diaphragm*, wherein the optical device is *arranged such that it focuses incident light and directs it through the at least one aperture to the light disposal element for absorbing extra light.*" Dependent claim 70 recites a method contrast enhancement for display devices wherein the method includes "*focusing an optical device* including a lens, *providing a diaphragm with at least one aperture arranged, relative to the incident light, behind the lens, and absorbing light using a light disposal element arranged, relative to the incident light, behind the diaphragm*, wherein the optical device is *arranged such that it focuses incident light and directs it through the at least one aperture to the light disposal element for absorbing extra light.*"

In Figures 1-3, Silhengst merely discloses an optical element for traffic signs comprising a housing 4, within which an LED 1 and an auxiliary reflector 21 is provided at its rear end, a converging lens 2 is arranged coaxially immediately in front of the LED 1 and a diverging lens 3 is arranged at the front end of the housing 4. Light beams 7 emerging at each point of the converging lens 2 intersect before striking the diverging lens 3 and there, form a focal spot 9. In the embodiment of Figure 3, a diaphragm 10 is arranged in the area of the focal spot 9, whose

aperture 11 is adapted to the periphery of the beams of light rays 7. Thus, the light rays coming from LED 1 go through the converging lens and the aperture of the diaphragm and then through the diverging lens 3 thereby exciting the optical element (see col. 3 lines 2024, lines 40-50 and col. 4 lines 39-43 and 55-58).

In contrast to the Examiner, it is respectfully submitted that Silhengst does not anticipate claims 50, 52, 57 and 70. The Examiner relies on the sections describing Figures 1-3 of Silhengst as disclosing the claimed subject matter recited in independent claims 50 and 70. It is respectfully submitted that the Examiner's interpretation of the relied upon sections is clearly erroneous.

Although Silhengst is directed to avoid phantom light behavior by providing light absorbing means, its function is different than the claimed invention as recited in the independent claims. As described with reference to the embodiment, as shown in Figures 1-3, the geometry of the diverging lens 3 is set up such that the exiting light beam 8 always remain below an angle inclination α. The angle α is the angle of light incidence limit for interfering a light, in particular the light from the sun in a low position 12. In this way, no light beam 12, insofar as it strikes the optical element at an angle γ less than or equal to α, finds the same path back, either via a reflector 21 or directly up to a chip 20 of the LED 1 and thus simulates an illumination of the LED. It is proposed that the length of the optical element is established such that no sun beam 12 can at all penetrate up to the converging lens 2 of the LED 1. To that end, the housing is constructed with a surface structure, such as circumferential grooves, which is as matte and light-absorbing as possible, preferably in black, so that in can absorb all the incident light beams 12 as well as possible. With specific reference to Figure 3, it is stated that the diaphragm in the area of the focal spot 9, completely hinders sun beams 12 from further penetration into the housing interior. The phantom light behavior shall be further improved if all intruding light beams can be trapped al the diaphragm 10 (see column 3, line 52 to column 4., line 15 and column: 4 lines 55-64).

Thus, the optical element as described in Silhengst is designed such that sunlight incident from the outside at an angle γ greater than or equal to the limit angle α is completely blocked, either by the diaphragm or by absorption on the housing wall, so that no phantom light is generated (see Abstract).

However, Silhengst is distinguished from the claimed invention in that this known optical element has the disadvantage that any incident light from the ***outside at an angle smaller than the limit angle α is not blocked***, i.e. neither by the diaphragm nor by any absorption on the housing wall. On the other hand, the device according to the present invention comprises a focusing optical device including a lens, ***a diaphragm with at least one aperture and a light disposal element for absorbing light being arranged one after the other***. The optical device is ***arranged such that it focuses incident light regardless of its angle of incidence and directs it through the at least one aperture to the light disposal element for absorbing extra light***.

Therefore, for at least these reasons, independent claims 50 and 70 are distinguishable from Silhengst. Claims 52 and 57 depend from claim 50. Therefore, for at least the reasons stated with respect to claim 50, claims 52 and 57 are also distinguishable from Silhengst.

Accordingly, Applicant respectfully requests that the rejection of claims 50, 52, 57, and 70, based on Silhengst, be withdrawn.

B. Claims 50, 52-53, 56-57, 59-60, 62-63, 65, and 70 stand rejected under 35 U.S.C. § 102(b) as allegedly being anticipated by Takahara (US 6,331,878). Applicant respectfully traverses this rejection.

Takahara is directed to a reflected light absorbing plate and a display panel for use in a display apparatus. The embodiment as shown and described with reference to Figure 51 has been relied upon by the Examiner as disclosing the claimed invention recited in independent claims 50 and 70. Applicant respectfully submits that the Examiner's interpretation of the relied upon section of Takahara is clearly erroneous.

The embodiment of Figure 51 merely comprises a projection lens 214 being composed of a front lens group 511a and rear lens group 511b. A first stop 518 is arranged between the front lens group 511a and the rear lens group 511b. The display further comprises an output section

condensing lens 517 and a second stop 516. The output section condensing lens 517 and the rear projection group 511b are set in the conjugating relation with respect to the stop 516 and the stop 518 (see column 47, lines 4-11).

Takahara further discloses an input section condensing lens array 514 constituted by arranging plural input section condensing lenses 519 in a two-dimensional manger (see column 47, lines 12 to 14).

As disclosed by Takahara, light radiated from a light emitting body of a metal halide lamp 211a is reflected by parabolic mirror 211b and proceeds generally in parallel with the optical axis 524 and is incident on the input section condensing lens array 514. The light flux having passed the input section condensing lens array 514 is divided into the same number of light fluxes as that of the input section condensing lens array 514, and each partial light flux illuminates the display area of the PD display panel 134 (col. 47, lines 28 to 42). Each light having passed the input section condensing lens array 514 is guided to the aperture of the corresponding central section condensing lens 520 to be condensed thereon. On each aperture of the central section condensing lens 520, a secondary light emitting body for example, 521a, 521b is formed. Each central section condensing lens 520 effectively transmits the corresponding light to the display area of the PD display panel 134 (see column 47 lines 54-64).

The projection type display apparatus shall be able to set the openings on the illumination light side and the projections lens side at the smallest required size by the functions of the stops 516 and 518, the fall in the contrast can be suppressed. Concretely, the opening of the stop 516 on the illunmination light side is formed as shown in Figure 54 in accordance with the effective areas of the secondary light emitting bodies formed dispersedly. The dotted line corresponds to each aperture of the central section condensing lens 520. The broken lines in Figure 54 correspond to each aperture of the center section condensing lens 520 of Figure 53. Furthermore, because the solid image is formed on each opening of the stop 518 or the projection lens side, the shape of the opening of the stop 518 is made the same with that of the stop 516. With this configuration because the light having passed the stop 516 passes the stop 518, a high

light utilization efficiency can be realized. As a result, a bright and high quality projected image can be provided and a great effect can be obtained (see column 49, lines 7-25).

Takahara, further proposes to attach a transparent substrate 24 to the light outgoing face of the display panel 134 via the optical coupling layer 14 wherein the transparent substrate shall suppress the secondary diffusion light from taking place due to the scattered light diffused by a liquid crystal layer 16. In the projection type display apparatus having the lens arrays 514 and 515, since considerably intensive light is applied up to the peripheral portion of the display apparatus 135 to generate secondary diffusion light with high rate, therefore, this effect of the transparent substrate is great. Instead of the transparent substrate 24, a reflection light absorbing plate 23 can be employed (see column 49, line 66 to column 50, line 26).

With reference to Figure 1, the functioning of the light absorbing plate 23 is further described. When the angle of diffusion light with respect to an outgoing face 21 of the light absorbing plate 23 is smaller than the critical angle, the diffusion light is transmitted as a transmission light 18. When the angle is larger than the critical angle, the light is totally reflected by the interface as a reflected light (see column 9, lilies 16 to 40). The reflection light absorbing plate 23, has a plurality of light absorbing films 20 formed therein, so that the reflected light 19 is absorbed by the light absorbing films 20 in the light absorbing plate 23 (see column 9, lines 57 to 61).

In addition, in order to surely suppress the secondary diffusion or scattering light more reliably, Takahara prefers to form a pair of light absorbing films 51 on the non-effective area of such array substrate, wherein the non-effective area means an area which is not on the route of incident and outgoing light of the display panel (see column 12, line 66 to column 13, line 5).

Takahara is distinguished from the claimed invention in that the device disclosed in Takahara only absorbs the secondary diffusion or scattering light. Therefore, Takahara's device cannot anticipates an optical device which ***focuses incident light and directs it through the at least one aperture to the light disposal element for absorbing extra light*** as recited in independent claims 50 and 70. Further, since the device of Takahara only absorbs the secondary

diffusion or scattering light, the particular arrangement, as claimed cannot be anticipated by Takahara.

Therefore, for at least these reasons, independent claims 50 and 70 are distinguishable from Takahara. Claims 52-53, 56-57, 59-60, 62-63, 65 depend from claim 50, directly or indirectly. Therefore, for at least the reasons stated with respect to claim 50, claims 52-53, 56-57, 59-60, 62-63, 65 are also distinguishable from Takahara.

Accordingly, Applicant respectfully requests that the rejection of claims 50, 52-53, 56-57, 59-60, 62-63, 65, and 70, based on Takahara, be withdrawn.

C. Claims 50, 52, 57-58, and 70 stand rejected under 35 U.S.C. § 102(b) as allegedly being anticipated by Amanai et al. (US Publication No. 2003/0034935). This rejection is respectfully traversed for the following reasons.

Amanai merely discloses a convention viewing optical system for a display apparatus that allows observation of a bright displayed image favorably corrected for aberrations and easy to assemble, resistant to impact such as vibration, lightweight and compact. In this system, an ocular optical member for leading an observation image formed by an observation image forming member to an exit pupil has a first prism member 3 and a second prism member 4 (see Abstract). The side surfaces of the first prism member 3 and the side surface and bottom surface 4_3 of the second prism member 4 an each painted with a member having the property of absorbing light, e.g. black paint. Ghost light eliminating members 15 should preferably be provided on regions included in non-optical functional surfaces (i.e., surfaces other than the optical functional surfaces of the first and second prism members 3 and 4 that transmit of reflect the first light beam), such as the region outside the ray effective diameter of the first entrance surface 3_1 of the first prism member 3; the region outside the ray effective diameter of the reflecting surface 3_2 of the first prism member 3, and the region outside the ray effective diameter of the second exit surface 4_1 of the second prism member 4 (see paragraph [0219]). Thus, this known device substantially differs from the structure of the device according to the present invention. In particular, it does not comprise a focusing optical device, a diaphragm and a light disposal element in the positional relationship as claimed. Neither the cited portions nor

any other portions of Amanai teach or suggest ***a diaphragm with at least one aperture and a light disposal element for absorbing light being arranged one after the other***. Further, Amanzi is silent on whether the viewing optical system is ***arranged such that it focuses incident light regardless of its angle of incidence and directs it through the at least one aperture to the light disposal element for absorbing extra light***.

Therefore, for at least these reasons, independent claims 50 and 70 are distinguishable from Amanai. Claims 52, 57, and 58 depend from claim 50, directly or indirectly. Therefore, for at least the reasons stated with respect to claim 50, claims 52, 57, and 58 are also distinguishable from Amanai.

Accordingly, Applicant respectfully requests that the rejection of claims 50, 52, 57-58, and 70, based on Amanai, be withdrawn.

D. Claims 50, 57, 59, 60, and 70 stand rejected under 35 U.S.C. § 102(b) as allegedly being anticipated by Sannohe et al. (US 7,033,030 B2). Applicant respectfully traverses this rejection for the following reasons.

With reference to Figure 1, Sannohe describes a device which comprises a focusing optical element including a lens or mirror, i.e. concave mirror 2 or condenser lens 4, a diaphragm with at least one aperture, i.e. diaphragm 31 shown in Figure 1 and a light disposal element for deflecting light, i.e., a focusing mirror 5 and the reflecting light valve 6.

The reflecting light valve 6 controls a traveling direction of light according to a video signal and forms an optical image by a change in the reflection angle. An illuminating light 8 entering the reflecting light valve 6 reaches a projection lens 7 as ON light 9 at the time of an ON signal or travels outside an effective diameter of the projection lens 7 as OFF light 10 at the time of the OFF signal (see column 1, line 59 to column 2, line 22).

Sannohe is distinguished from the claimed invention in that nowhere does Sannohe teach or suggest a light disposable element for absorbing a light. Further, Sannohe is silent on whether the projection-type display apparatus is ***arranged such that it focuses incident light regardless of its angle of incidence and directs it through the at least one aperture to the light disposal***

element for absorbing extra light. Thus, the subject-matter as recited in claims 50 and 70 is substantially different from Sannohe.

Therefore, for at least these reasons, independent claims 50 and 70 are distinguishable from Sannohe. Claims 57, 59, and 60 depend from claim 50, directly or indirectly. Therefore, for at least the reasons stated with respect to claim 50, claims 57, 59, and 60 are also distinguishable from Sannohe.

Accordingly, Applicant respectfully requests that the rejection of claims 50, 57, 59, 60, and 70, based on Sannohe, be withdrawn.

E. As demonstrated above, none of the four documents cited by the Examiner disclose all the features of claim 50 and similarly of independent claim 70. Furthermore, none of the cited documents, even if combined with one or several of the other documents, suggest a device for contrast enhancement for display devices having the features of claim 50 and the corresponding method features of claim 70. Rather, the concept of absorbing all incident light by using a focusing optical device including a lens which focuses incident light and directs it through an aperture of the diaphragm arranged behind the lens to a light disposal element is neither disclosed nor suggested in the cited documents. Therefore, the subject-matter of independent claims 50 and 70, respectively, is not obvious.

Conclusion

In view of the above amendment and remarks, Applicant believes the pending application is in condition for allowance.

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact Ali M. Imam Reg. No. 58,755 at the telephone number of the undersigned below, to conduct an interview in an effort to expedite prosecution in connection with the present application.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37.C.F.R. §§1.16 or 1.14; particularly, extension of time fees.

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Respectfully submitted,

By #58,755
for Michael K. Mutter
Registration No.: 29,680
BIRCH, STEWART, KOLASCH & BIRCH, LLP
8110 Gatehouse Road
Suite 100 East
P.O. Box 747
Falls Church, Virginia 22040-0747
(703) 205-8000
Attorney for Applicant